

INFORMATION DISCLOSURE STATEMENT

FORM PTO 1449 (modified)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

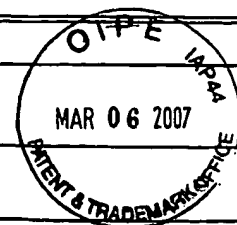
Date Submitted to PTO: March 6, 2007

ATTY DOCKET NO.
2000_1327SERIAL NO.
09/672,948APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 29, 2000

GROUP

~~2004~~

2611



U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
/DH/	AA	5,210,770	5-11-93	Rice			
/DH/	AB	5,519,730	5-21-96	Jasper et al.			
	AC						
	AD						
	AE						
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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
/DH/	AJ	3-13145	1-22-91	Japan			abstract	
/DH/	AK	4-322592	11-12-92	Japan			abstract	
/DH/	AL	63-253738	10-20-88	Japan			abstract	
/DH/	AM	62-502932	11-19-87	Japan			abstract	
/DH/	AN	58-107740	6-27-83	Japan			abstract	

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

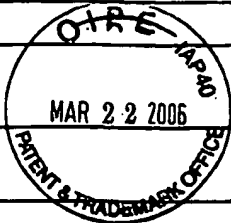
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EXAMINER

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DATE CONSIDERED

03/19/2007

Sheet 1 of 1		INFORMATION DISCLOSURE STATEMENT						
FORM PTO 1449 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) <i>(Use several sheets if necessary)</i> Date Submitted to PTO: March 22, 2006			ATTY DOCKET NO. 2000_1327		SERIAL NO. 09/672,948			
			APPLICANT Mitsuaki OSHIMA et al.					
			FILING DATE September 29, 2000			GROUP 2634 2611		
U.S. PATENT DOCUMENTS								
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
/DH/	AA	4,267,592	5-12-81	Craiglow				
/DH/	AB	4,601,045	7-15-86	Lubarsky				
/DH/	AC	4,912,706	3-27-90	Eisenberg et al.				
/DH/	AD	4,914,655	4-3-90	Johannes et al.				
/DH/	AE	5,018,198	5-21-91	Takahashi				
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FOREIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
	AJ							
	AK							
	AL							
	AM							
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OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)								
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EXAMINER				DATE CONSIDERED				
/Dac Ha/				03/05/2007				

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include cop. this form with next communication to applicant.

Sheet 1 of 1		INFORMATION DISCLOSURE STATEMENT					
FORM PTO 1449 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) <i>(Use several sheets if necessary)</i> Date Submitted to PTO: June 2, 2006				ATTY DOCKET NO. 2000_1327		SERIAL NO. 09/672,948	
				APPLICANT Mitsuaki OSHIMA et al.			
				FILING DATE September 29, 2000		GROUP 2634 2611	
U.S. PATENT DOCUMENTS							
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
/DH/	AA	4,003,002	1-11-77	Snijders et al.			
/DH/	AB	4,053,713	10-11-77	Nitadori			
	AC						
	AD						
	AE						
	AF						
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FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
	AJ						
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OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
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	AP						
	AQ						
EXAMINER				/Dac Ha/ DATE CONSIDERED 03/05/2007			

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include cop. this form with next communication to applicant.

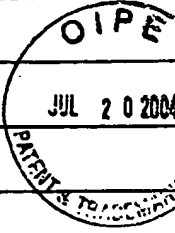
FORM PTO 1449 (modified)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

Date Submitted to PTO: July 20, 2004

ATTY DOCKET NO.
2000_1327SERIAL NO.
09/672,948APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 29, 2000GROUP
~~269~~ 2611

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
/DH/	AJ	2-154583	6-13-90	Japan			abstract	
	AK							
	AL							
	AM							
	AN							

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

/DH/	AO	Shigeki MORIYAMA et al., "Delay Propagation Characteristics at VHF and UHF bands in Urban Area", 1991 Spring National Convention Record, The Institute of Electronics, Information and Communication Engineers, Part 2, p. 406, March 15, 1991
/DH/	AP	Yasuhiro ITO et al., "Adaptive Weighted Code Division Multiplexing (AW-CDM) Transmission System for Terrestrial Digital Television Broadcasting", ITE Technical Report Vol. 17, No. 13, pp 27-32, February 25, 1993
	AQ	

EXAMINER

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DATE CONSIDERED

03/05/2007

Sheet 1 of 3		INFORMATION DISCLOSURE STATEMENT					
FORM PTO 1449 (modified)				ATTY DOCKET NO. 2000_1327		SERIAL NO. 09/672,948	
U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE				APPLICANT Mitsuaki OSHIMA et al.			
LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary)				FILING DATE September 29, 2000		GROUP 2634 2611	
Date Submitted to PTO: March 22, 2005							
U.S. PATENT DOCUMENTS							
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
DA	AA	3,824,548	7-16-74	Sullivan et al.	_____	_____	_____
	AB	3,959,726	5-25-76	Hinoshita et al.	_____	_____	_____
	AC	4,303,939	12-1-81	Stephens et al.	_____	_____	_____
	AD	4,303,941	12-1-81	Marti et al.	_____	_____	_____
	AE	4,309,726	1-5-82	Tanaka et al.	_____	_____	_____
	AF	4,535,352	8-85	Haskell	_____	_____	_____
	AG	4,564,858	1-14-86	Resch	_____	_____	_____
	AH	4,581,639	4-8-86	Judge	_____	_____	_____
	AI	4,769,819	9-6-88	Matsutani et al.	_____	_____	_____
	AJ	4,794,447	12-27-88	Tsinberg	_____	_____	_____
	AK	4,817,192	3-28-89	Phillips et al.	_____	_____	_____
	AL	5,029,003	7-91	Jonnalagadda	_____	_____	_____
	AM	5,134,464	7-28-92	Basile et al.	_____	_____	_____
	AN	5,400,084	3-21-95	Scarpa	_____	_____	_____
	DA	AO	4,800,426	1-24-89	Glenn	_____	_____
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
	AP						
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
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EXAMINER <i>[Signature]</i>				DATE CONSIDERED 01/20/06			

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INFORMATION DISCLOSURE STATEMENT

FORM PTO 1449 (modified)

ATTY DOCKET NO.
2000_1327SERIAL NO.
09/672,948U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)APPLICANT
Mitsuaki OSHIMA et al.

Date Submitted to PTO: March 22, 2005

FILING DATE
September 29, 2000GROUP
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U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
DH	AA	5,181,112	1-19-93	Citta et al.	—	—	—
	AB	5,377,051	12-27-94	Lane et al.	—	—	—
	AC	5,576,902	11-19-96	Lane et al.	—	—	—
	AD	5,218,622	6-8-93	Fazel et al.	—	—	—
	AE	5,598,220	1-97	Citta et al.	—	—	—
	AF	5,802,241	9-1-98	Oshima	—	—	—
	AG	5,007,088	4-9-91	Ooi et al.	—	—	—
	AH	5,214,656	5-25-93	Chung et al.	—	—	—
DH	AI	5,170,413	12-8-92	Hess et al.	—	—	—

FOREIGN PATENT DOCUMENTS

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DH	AJ	3-69295	3-25-91	Japan	—	—	X
DH	AK	2-260726	10-23-90	Japan	—	—	X
DH	AL	58-161427	9-26-83	Japan	—	—	abstract
DH	AM	57-39629	3-4-82	Japan	—	—	abstract
DH	AN	58-161547	9-26-83	Japan	—	—	abstract

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

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EXAMINER

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FORM PTO 1449 (modified)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

Date Submitted to PTO: March 22, 2005

ATTY DOCKET NO.
2000_1327SERIAL NO.
09/672,948APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 29, 2000GROUP
~~2634~~ 2611MAR 22 2005
U.S. PATENT & TRADEMARK OFFICE

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
DH	AA	5,128,758	7-7-92	Azadegan et al.	—	—	—
	AB	5,038,402	8-6-91	Robbins	—	—	—
	AC	5,638,112	6-10-97	Bestler et al.	—	—	—
	AD	5,063,445	11-5-91	Nishizawa et al.	—	—	—
	AE	5,819,000	10-6-98	Oshima	—	—	—
	AF	5,999,569	12-7-99	Oshima	—	—	—
	AG	5,892,879	4-6-99	Oshima	—	—	—
	AH	6,049,651	4-11-00	Oshima	—	—	—
DH	AI	6,256,357	7-3-01	Oshima	—	—	—

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
DH	AJ	63-180222	7-25-88	Japan	—	—	abstract
DH	AK	2-94814	4-5-90	Japan	—	—	abstract
DH	AL	61-70861	4-11-86	Japan	—	—	abstract
DH	AM	2-218279	8-30-90	Japan	—	—	abstract
DH	AN	2,095,435	5-10-92	Canada	—	—	X
DH	AO	91/20137	12-26-91	WO	—	—	X
DH	AP	92/22162	12-10-92	WO	—	—	X

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

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DATE CONSIDERED

01/24/06

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FORM PTO 1449 (modified)

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2000_1327SERIAL NO.
09/672,948U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

Date Submitted to PTO: April 13, 2005

APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 29, 2000GROUP
~~2634~~ 2611

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA						
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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
	AJ						
	AK						
	AL						
	AM						
	AN						

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

DA	AO	J. A. C. Bingham, "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come", IEEE Communications Magazine, Vol. 28, May 1990, pages 5-8 and 11-14
DA	AP	B. Hirosaki, "An Orthogonally Multiplexed QAM System Using the Discrete Fourier Transform", IEEE Transactions on Communications, Vol. Com-29, No. 7, July 1981, pages 982-989
DA	AQ	L. J. Cimini, Jr., "Analysis and Simulation of a Digital Mobile Channel Using Orthogonal Frequency Division Multiplexing", IEEE Transactions on Communications, Vol. Com-33, No. 7, July 1985, pages 665-675 and Annex

EXAMINER

DATE CONSIDERED

01/20/06

Sheet 1 of 1		INFORMATION DISCLOSURE STATEMENT					
FORM PTO 1448 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary) Date Submitted to PTO: December 19, 2005				ATTY DOCKET NO. 2000_1327		SERIAL NO. 09/672,948	
				APPLICANT Mitsuaki OSHIMA et al.			
				FILING DATE September 29, 2000		GROUP 2614 2611	

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
DH	AA	4,597,090	Forney, Jr.			
	AB	4,077,021	Csajka et al.			
	AC	2005/0084760	Wang et al.			
	AD	2005/0056033	Epstein et al.			
	AE	2005/0922922				
	AF	4,918,437	Jasinski et al.			
	AG	5,023,889	Divsalar et al.			
	AH	5,063,452	Higurashi			
	AI	5,124,852	Suwa et al.			
	AJ	5,136,380	Cho			
	AK	5,146,335	Kim et al.			
	AL	5,148,422	Sako et al.			
DH	AM	5,218,436	Sugiyama et al.			

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
DH AN 2627574	7-21-04	CN			
DH AO 1529838	5-11-05	EP			abstract
DH AP 1499725	5-26-04	CN			only abstract
DH AQ 2004-159207	6-3-04	JP			corresponds to AP
DH AR 1528854	5-11-05	EP			only abstract
DH AS 52118	12-16-02	UA			only abstract
DH AT 1569334	1-26-05	CN			

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER	DATE CONSIDERED
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INFORMATION DISCLOSURE STATEMENT							
Sheet 1 of 1 FORM PTO 1449 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary) Date Submitted to PTO: December 21, 2004				ATTY DOCKET NO. 2000_1327		SERIAL NO. 09/672,948	
				APPLICANT Mitsuaki OSHIMA et al.			
				FILING DATE September 29, 2000		GROUP 286* 2611	
U.S. PATENT DOCUMENTS							
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
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	AB						
	AC						
	AD						
	AE						
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	AG						
	AH						
	AI						
FOREIGN PATENT DOCUMENTS							
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	AK						
	AL						
	AM						
	AN						
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
DH	AO	Masafumi SAITO et al., "Bit Error Rate Characteristics of OFDM in Multipath Environment", 1991					
DH	AP	Ryutaro OHMOTO et al., " $\pi/4$ -shift QPSK Subcarrier Transmission", 1991					
	AQ						
EXAMINER				DATE CONSIDERED 01/20/06			

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U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

Date Submitted to PTO: September 29, 2000

ATTY DOCKET NO.
2000_1327SERIAL NO.
NEW

09672948

APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 29, 2000

GROUP 2034

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AS	AA	5,311,550	5-10-94	Fouche et al.	—	—	
	AB	4,630,287	12-16-86	Armstrong	—	—	
	AC	4,271,527	6-2-81	Armstrong	—	—	
	AD	5,050,188	9-17-91	Dirr	—	—	
	AE	5,398,073	3-14-95	Wei	I	I	
	AF	5,452,015	9-19-95	Hulyalkar			
	AG	5,565,932	10-15-96	Gitta et al.			
	AH	5,481,412	1-2-96	Bannai et al.			
	AI	3,909,721	9-30-75	Bussgang et al.			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
	AJ	0365431	4-25-90	EP	I	I		X
	AK	0485105	5-13-92	EP	I	I	X	
	AL	92/14343	8-20-92	WO			X	
	AM	89/08366	9-8-89	WO			X	
	AN	0031193	7-1-81	EP			X	

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

	AO	Shinji Matsumoto et al., "200 Mb/s 16 QAM Digital Radio-Relay System Operating in 4 and 5 GHz Bands", Japan Telecommunications Review, January 1982, vol. 24, no. 1, pages 65-73.
	AP	M. Pecot et al., "Compatible Coding of Television Images, Part 2. Compatible System", Signal Processing Image Communication, October 2, 1990, no. 3, pages 259-268.
AS	AQ	Mitsuaki Oshima, "Constellation-Code Division Multiplex for Digital HDTV", IEEE, 1992, pages 1086-1092.

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DATE CONSIDERED

08.21.02

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GROUP

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
SC	AA	4,227,152	10-7-80	Godard et al.	I	I	
	AB	4,525,846	6-25-85	Bremer et al.	I	I	
	AC	4,751,478	6-14-88	Yoshida	I	I	
	AD	4,891,806	1-2-90	Farias et al.	I	I	
	AE	4,903,125	2-20-90	Parker	I	I	
	AF	4,937,844	6-26-90	Kao	I	I	
	AG	5,164,963	11-17-92	Lawrence et al.	I	I	
	AH	5,555,275	9-1996	Oshima	I	I	
	AI						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
	AJ	0311188	4-12-89	EP	I	I	X
	AK	0329158	8-23-89	EP	I	I	X
	AL	64-5135	1-10-89	JP	I	I	X
	AM	63-28145	2-5-88	JP	I	I	X
	AN	62-133842	6-17-87	JP	I	I	X

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

	AO	Tricia Hill et al., "A Performance Study of NLA 64-State OAM", IEEE Transactions on Communications, vol. COM-31, June 1983, no. 6, pages 821-826.
	AP	Hideki Ishio et al., "A Proposal of a Carrier Digital Transmission System Using Multi-Level APSK", pages 1-20.
SC	AQ	Shanmugam, "Digital and Analog Communication Systems" 1979, p. 272.

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Date Submitted to PTO: September 29, 2000

ATTY DOCKET NO.
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09/672948

APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 29, 2000

GROUP

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AS	AA	5,105,442	4-14-92	Wei	I	I	
	AB	4,048,572	9-13-77	Dogliotti et al.	I	I	
	AC	5,282,019	1-25-94	Basile et al.	I	I	
	AD	5,311,547	5-10-94	Wei	I	I	
	AE	5,267,021	11-30-93	Ramchandran et al.	I	I	
	AF	5,038,219	8-6-91	Yamashita et al.	I	I	
	AG	5,087,975	2-11-92	Citta et al.	I	I	
	AH	5,086,340	2-4-92	Citta et al.	I	I	
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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
	AJ	53-137657	12-1-78	JP	I	I	X
	AK	0282298	9-14-88	Europe	I	I	X
	AL	0392538	10-17-90	Europe	I	I	X
	AM	0490552	6-17-92	Europe	I	I	X
	AN	0506400A2	9-30-92	Europe	I	I	

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Amendate

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*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
AS	AJ	0448492A1	9-25-91	Europe	I	I	✓
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